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determination of the orbit of this comet is by M. D'Arrest (*Ast. Nach.* No. 875, p. 192):—

T ...	1853, Sept. 1·74969	M.T. Berlin.
	° ′ ″	
π	310 58 29·8	Mean Equinox, 1853·0.
☊	140 31 3·4	
i	61 30 46·2	
Log q	9·4867092	

Motion direct.

Discovery of a New Comet. By M. Brühns.

On the night of the 11th September, M. Brühns, of the Berlin Observatory, discovered in the constellation of the *Lynx* a pretty large nebulous object, having some resemblance to a cluster of stars, but which from its proper motion he soon recognised to be a comet.

	M.T. Berlin.	R.A.	Decl.
1853.	h m s	° ′ ″	° ′ ″
Sept. 11	13 12 15·3	126 59 11·5	+44 51 33·6
13	12 6 31·0	129 33 3·7	+43 47 17·4
15	12 13 53·8	132 22 8·9	+42 29 54·5

The following elements of this comet have been calculated by M. Brühns from the observations of Sept. 11, 16, and 21:—

Comet IV. 1853.

T	Oct. 16·6304	
	° ′ ″	
π	301 55 8·8	Mean Equinox, 1853·0.
☊	220 19 11·8	
i	61 15 55·2	
Log q	9·23106	

Motion retrograde.

Explanation of some Points relative to the Photometry of Telescopic Stars. By the Rev. W. R. Dawes.

In an Appendix to the twelfth volume of the Radcliffe Observations, recently published, is contained a series of highly interesting and valuable remarks and observations on the photometry of stars by means of the heliometer. In referring to a paper of mine, "On a Photometrical Method of Determining the Magnitudes of Telescopic Stars," which was printed in the *Monthly Notices* for June 1851, Mr. Johnson has suggested (see p. 16 of the Appendix), that in my observations, according to that method, I probably diminished not only the aperture of the telescope, but "also the pupil of my own eye to $\frac{3}{5}$ of its natural dimensions, and thus curtailed its capacity for receiving light:" and proceeding upon this

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hypothesis, he shows, very ingeniously, that the discordance between his results and mine may be almost wholly removed. It may, therefore, be desirable that I should state, that my method has been in this respect misapprehended, and that *no diminution of the pupil* was employed in my telescopic determinations of magnitudes. The discordance of our results remains, therefore, to be accounted for.

It has also been supposed (see p. 17 of the Appendix), that the apertures employed by me in the determination of magnitudes, by reducing the light of the stars to a minimum, are not given in my paper above alluded to; and that they must have been different from those contained in the table on p. 191 of the *Monthly Notices.* The apertures there stated, however, are those which I actually employed, as being *suitable to my own eye*, which requires an aperture of $0^{\text{in}}\cdot15$ to render visible Argelander's average sixth magnitude. The minimum visibility of a star with any one of the apertures in that table *determines* it to be of the magnitude corresponding to that aperture, and standing against it in col. 1. The heading of that column ("Σ's magnitudes") does not indicate that the numerical magnitudes composing it were *actually assigned by Struve to any particular stars observed and estimated by him*, but only that those magnitudes are arranged according to the ratio of progression employed by Struve and adopted by myself; as those in col. 2 represent the *theoretical* scale adopted by Sir John Herschel. In fact, the magnitudes in col. 1 are carried down to the 15th, and in col. 2 to the 24th; whereas Struve never estimated magnitudes below the 12th, nor Herschel below the 20th.

Remarks on the Application of the Heliometer to the Photometry of the Stars. By Manuel J. Johnson, Esq., Director of the Radcliffe Observatory, Oxford. (Appendix I. to vol. xii. of the Radcliffe Observations).

Before proceeding to give an account of his researches on this subject, Mr. Johnson explains a mode of estimating the magnitudes of the stars, which was practised by himself and his assistant Mr. Lucas, while engaged in reobserving the objects of Groombridge's Catalogue with the meridian instruments. This was founded on the degree of illumination which was necessary for the observation of the star, if under the sixth magnitude, and in the case of larger stars, on the visibility of the *corona* or halo of light by which the object was observed to be surrounded. In this manner he was enabled to form an unbroken scale of brightness, extending from stars of the fourth down to those of the tenth magnitude, the latter being the smallest stars visible in the transit telescope when the field of view was slightly illuminated. A very satisfactory accordance was found by Mr. Johnson to subsist between his own results and those of his assistant; and after some experience of the method he felt convinced that a tolerably accurate judgment of the relative brightness of the stars might be formed by employing it.

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